



Virginia Wastewater Surveillance Program: Community of Practice

Wastewater Surveillance Team
VDH | Office of Environmental Health Services
Monthly Meeting: June 30, 2021

Agenda



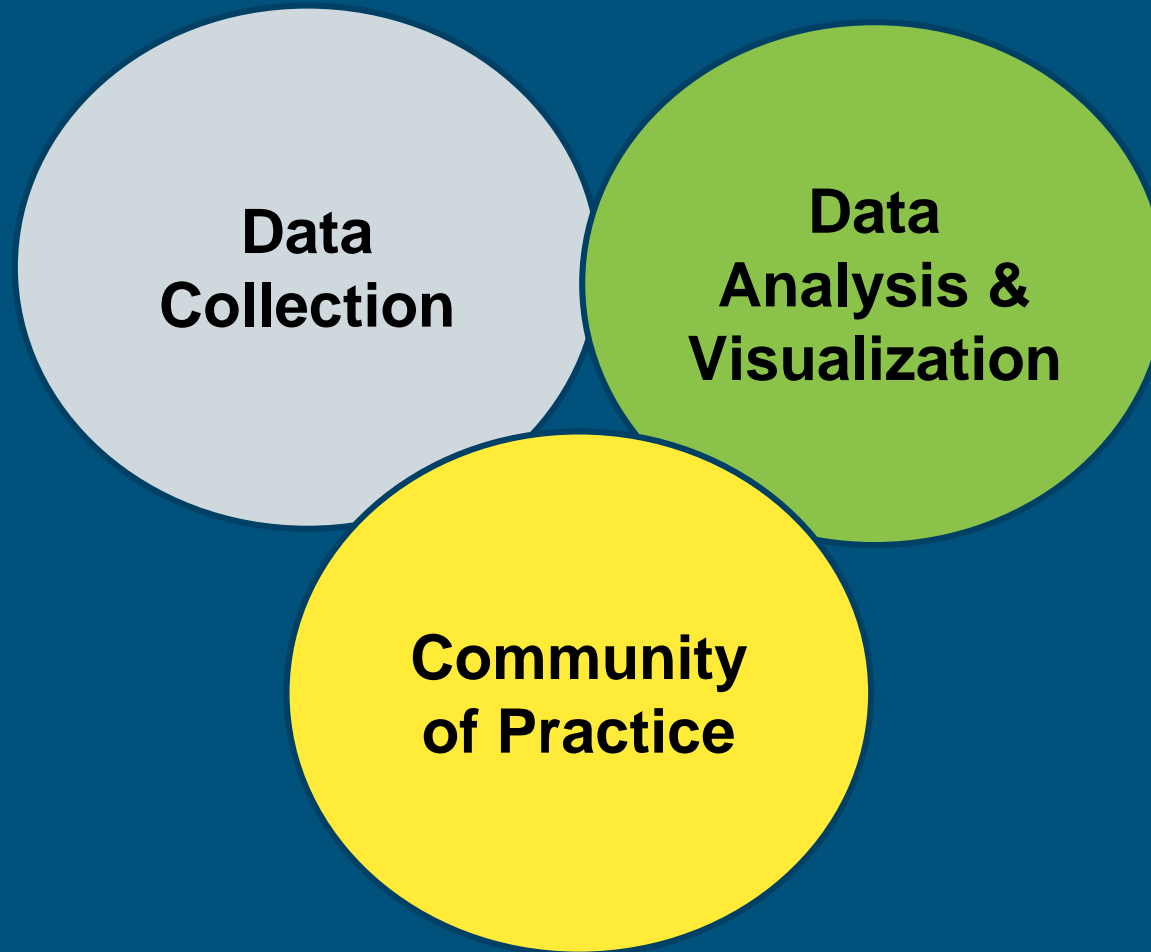
1. VDH Updates & Funding Options (5 mins)

2. Topic(s) of Interest (15 mins):

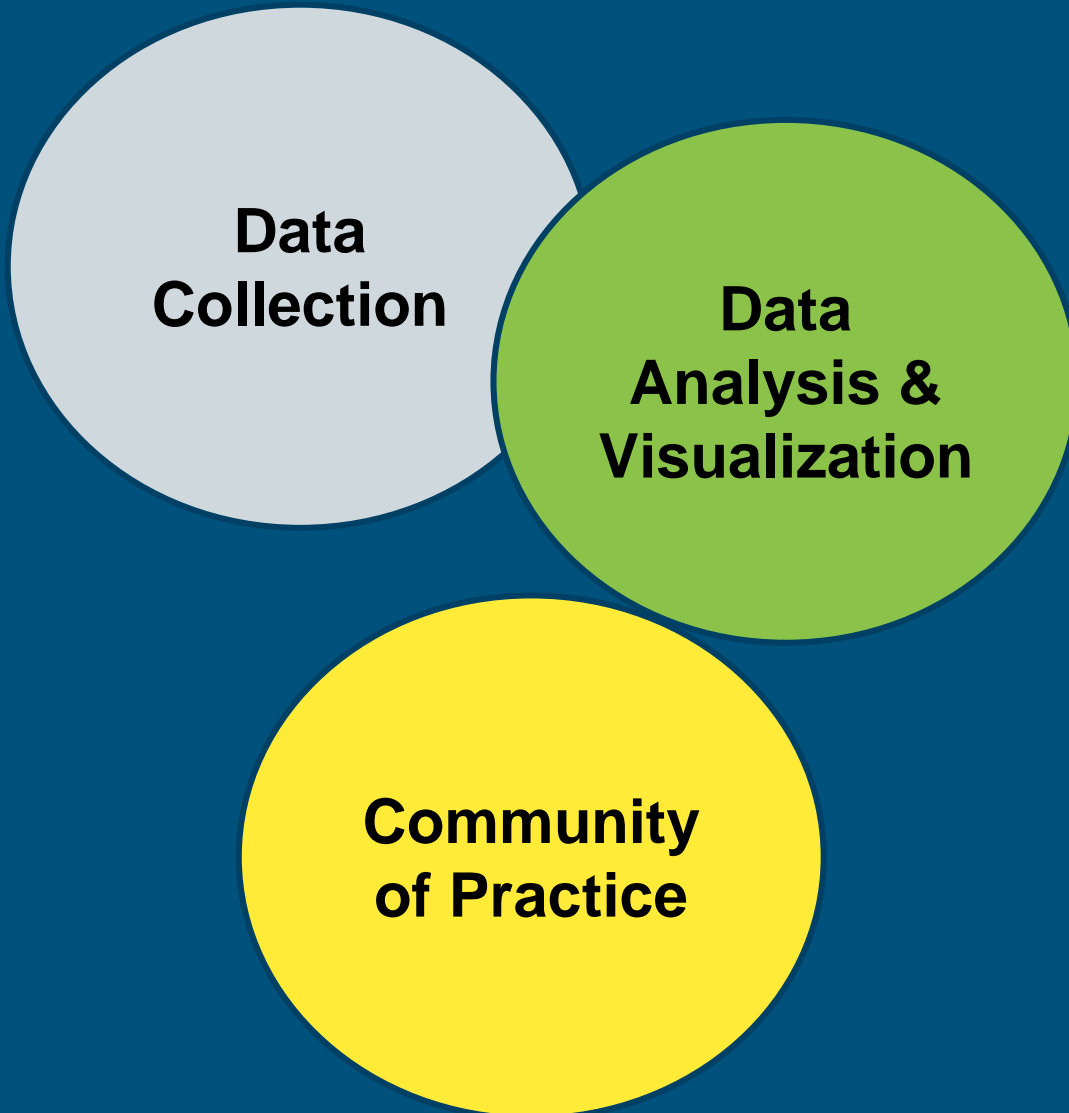
Future of Wastewater Surveillance with Wiley Jennings, CDC

3. Open Discussion (10 mins)

Goals of Virginia Surveillance Program



Virginia NWSS Status Updates



Data Collection, Analysis, & Visualization

1. Updating funding options
2. Consistently uploading data to CDC NWSS
3. Gaining traction on other sites' data
4. Collecting sewershed shapefiles
5. Continuing localized projects
6. Collaborating on case data collection, database/dashboard development

Community of Practice

Meet on Last Wednesday of each month

June's Topic of Interest:

Future of Wastewater Surveillance

Funding Options

New Project Proposal: August 2021

- **Sentinel monitoring**
 - Influent monitoring at 25 wastewater treatment plants
- **Localized projects**
 - Sewershed monitoring upstream of influent
- **Variant surveillance**
 - Monthly sampling at upwards of 20 sites for variants of concern

Utilities can apply here!

Deadline: Extended to July 15, 2021

Questions About Funding

- Is Sentinel Monitoring different from Biobot-HHS sampling?
- When does Sentinel Monitoring begin?
- How does Sentinel Monitoring sampling frequency/data collection differ from HHS?
- Can we 'double sample' for Sentinel Monitoring and any other program? (e.g., other laboratories, academia)



Biobot-HHS Phase 2

- Upper Occoquan Service Authority
- Western Virginia Water Authority
- Pepper's Ferry Regional Wastewater Treatment Authority
- Town of Purcellville
- Alexandria Renew Enterprises
- Harrisonburg-Rockingham Regional Sewer Authority
- Hopewell Water Renewal
- Town of Abingdon
- Loudoun Water
- South Central Wastewater Authority
- Arlington County Water Pollution Control Bureau

Sentinel Monitoring Applicants

- Upper Occoquan Service Authority
- Western Virginia Water Authority
- Pepper's Ferry Regional Wastewater Treatment Authority
- Town of Purcellville
- Alexandria Renew Enterprises
- Harrisonburg-Rockingham Regional Sewer Authority
- Rivanna Water and Sewer Authority
- City of Danville
- Town of Christiansburg
- Blacksburg-VPI Sanitation Authority
- Town of Amherst



Future of Wastewater Surveillance



Wiley Jennings, PhD, Data Lead
National Wastewater Surveillance System, CDC



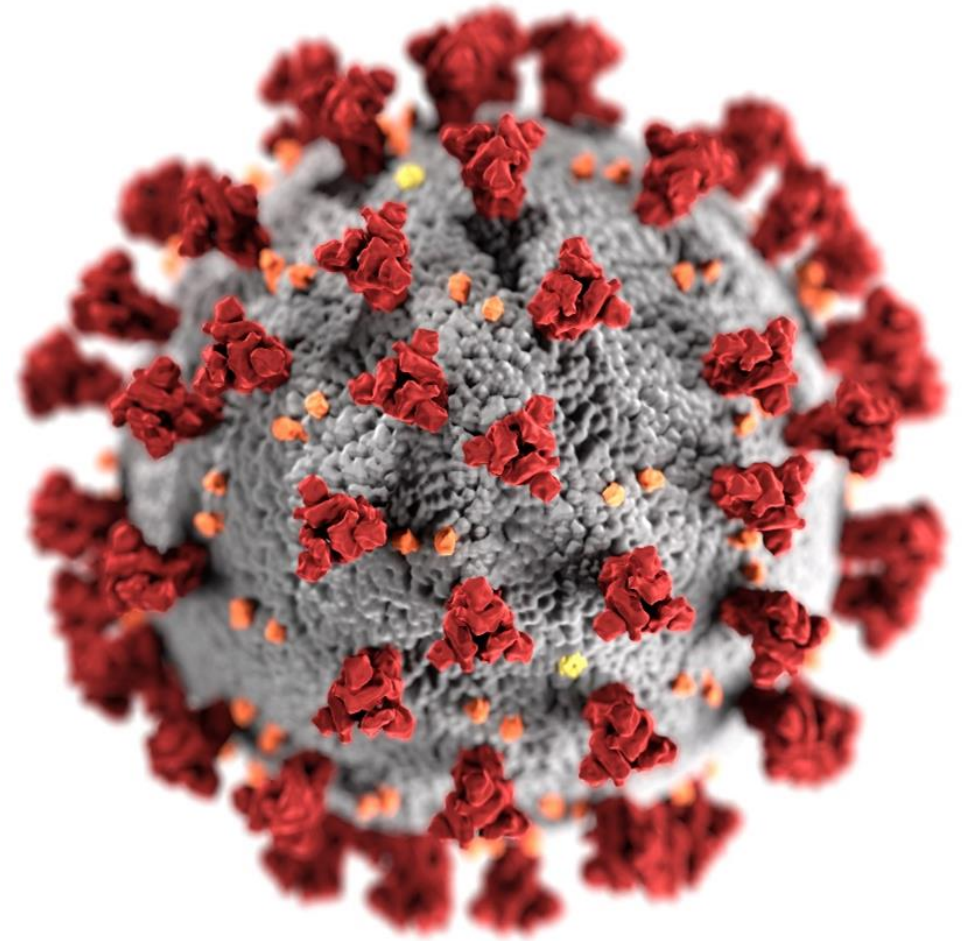
National Wastewater Surveillance System

Implementation for COVID-19 and Beyond

Wiley Jennings, PhD

National Wastewater Surveillance System Data Lead
Waterborne Disease Prevention Branch
Division of Foodborne, Waterborne and Environmental Diseases

Standards to Support an Enduring Capability in Wastewater Surveillance for Public Health Workshop
June 30, 2021

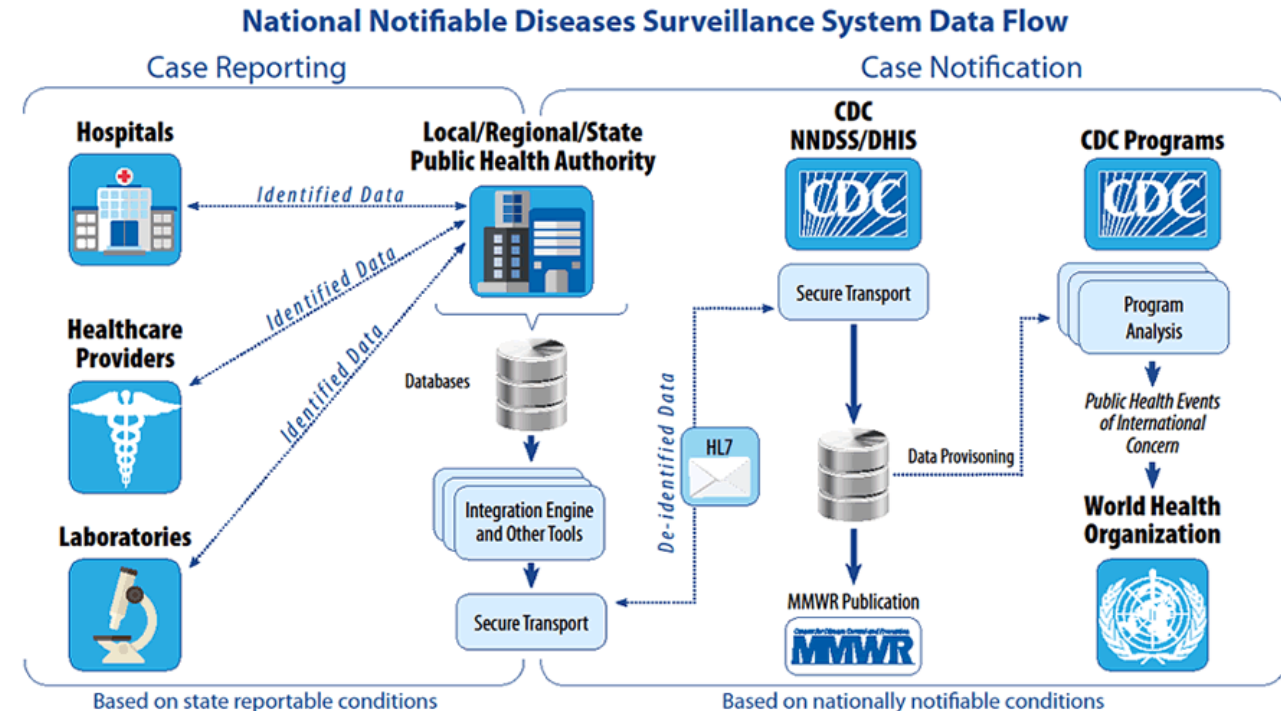


NATIONAL
WASTEWATER
SURVEILLANCE
SYSTEM

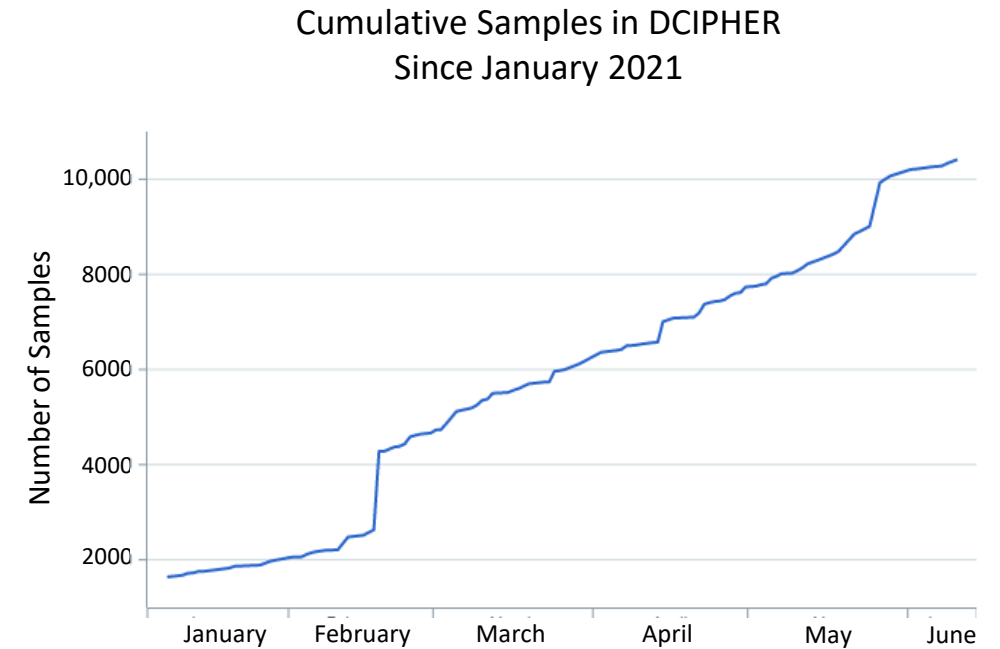
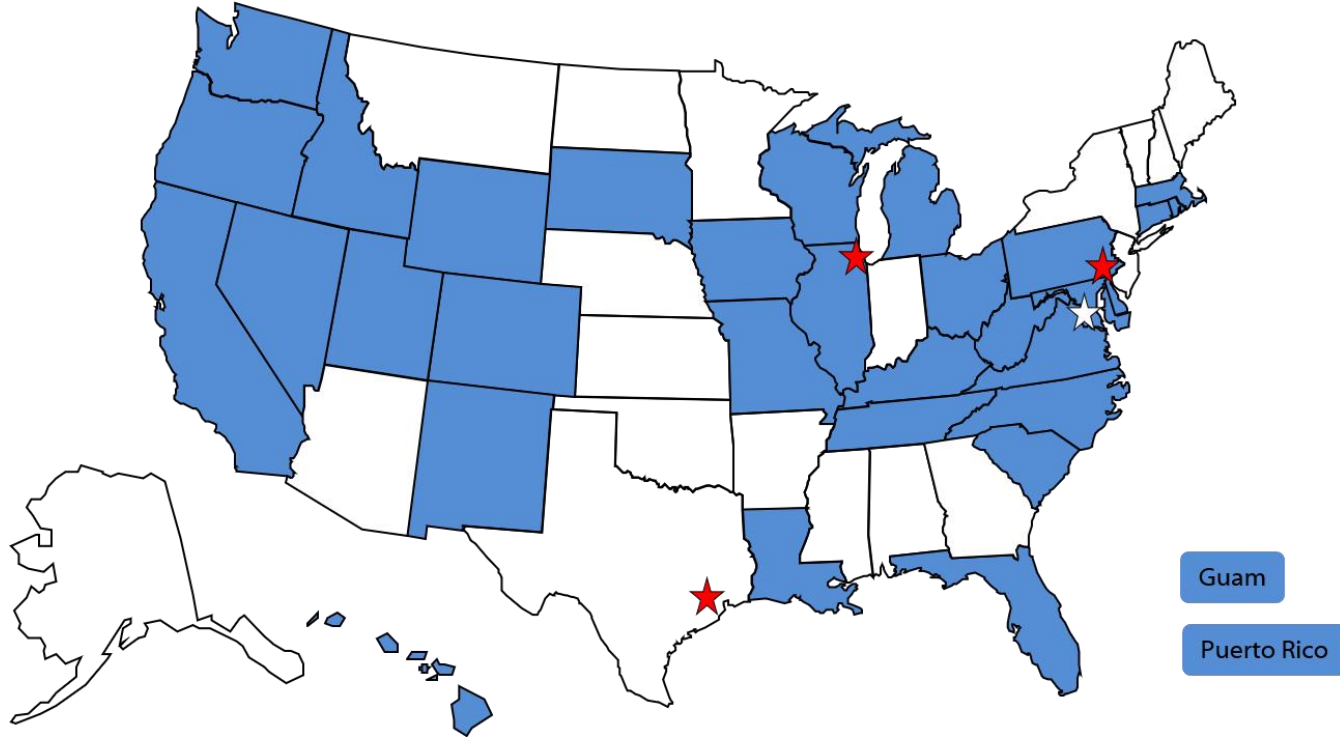
cdc.gov/coronavirus

National Disease Surveillance | CDC's Role

- Ensure data comparability across jurisdictions
- Analyze data to provide public health interpretation and guidance
- Summarize and make national data available for states and public
- Support inter-health agency communication for public health action



Participation in NWSS is growing quickly



- Currently, 36 ELC-funded jurisdictions totaling \$223M for wastewater surveillance activities
- Additional \$34M pending award

NWSS Communities of Practice

Health Departments

Host: CDC

106 participants from 21 jurisdictions

- Peer-to-peer learning
- Data coordination, submission, & interpretation
- Public health action

Laboratories

Host: Association of Public Health Laboratories

37 participating labs in 27 jurisdictions

- Best Practices and Lab Startup Guides
- Corporate pricing agreements
- Workflow pilot projects

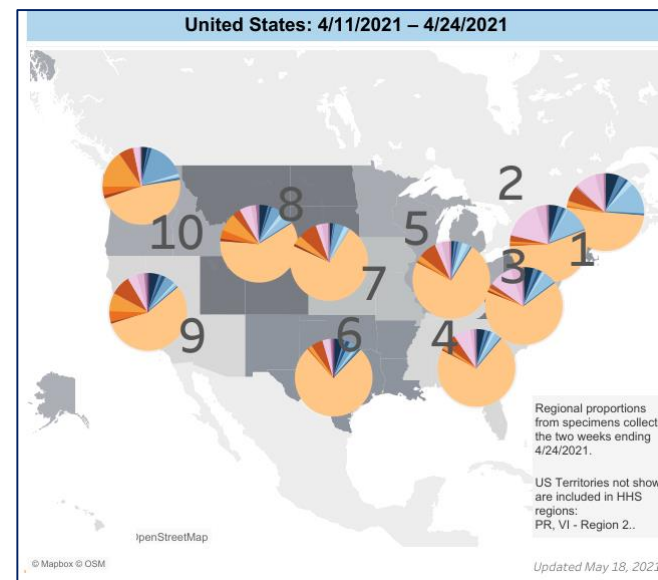
Utilities

Host: Water Environment Federation
517 registered facilities in 44 jurisdictions

- Discussion board at nwbe.org
- NWSS workshop at WEFTEC in October
- Autosampler program

SARS-CoV-2 Variant Tracking in Wastewater

- Interpretation is limited by
 - fragmented genomes present in wastewater
 - unknown method sensitivity
 - potential variation in shedding dynamics between variants
- Wastewater sequencing may be useful for variant **detection** and **tracking** but unlikely to be useful for variant discovery
- Pursuing multiple avenues to secure wastewater sequence data for evaluation
- Working with NCBI to establish database and preliminary analysis pipeline for wastewater SARS-CoV-2 sequence data

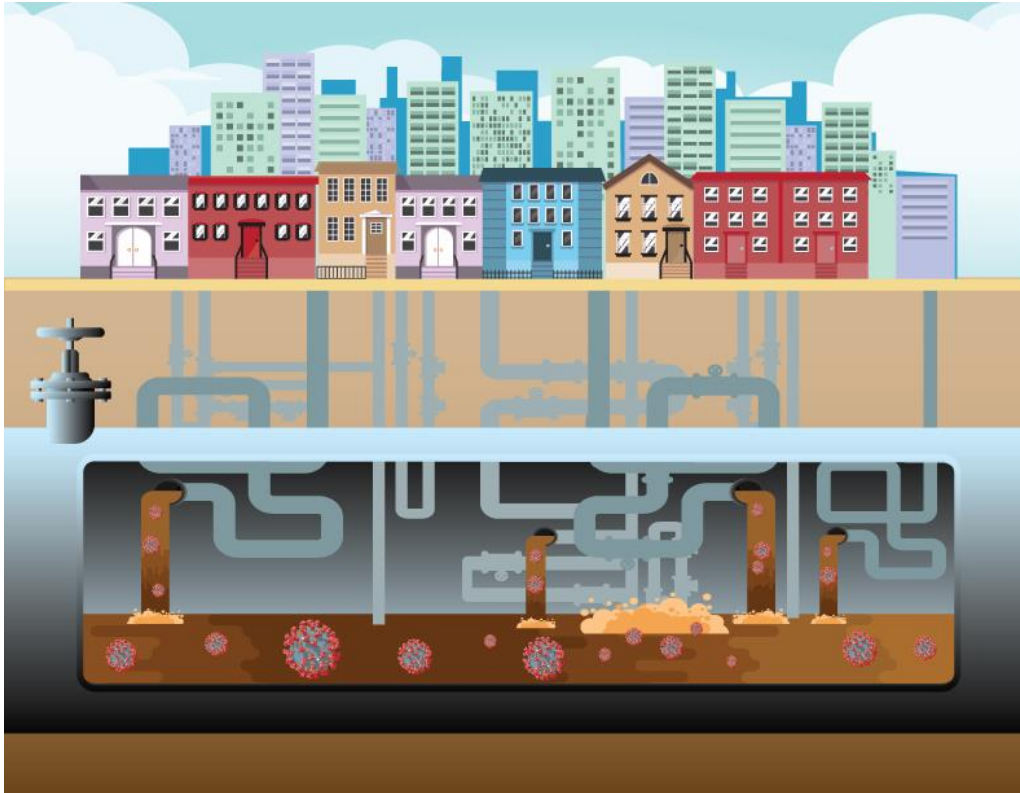


NWSS | Challenges

- Decentralized wastewater systems will not be captured
 - ~25% of US residences are not connected to sewer
 - Onsite treatment increasingly common at correctional facilities, universities
- Appropriate interpretation of data in low incidence settings
 - Negative results do not indicate absence of cases
- Barriers to implementation and sustainability
 - Hesitance to implement a “pilot” program
 - Building testing capacity in public health labs



NWSS | Beyond COVID







Flexible surveillance platform for
multiple health targets

Potential additional targets

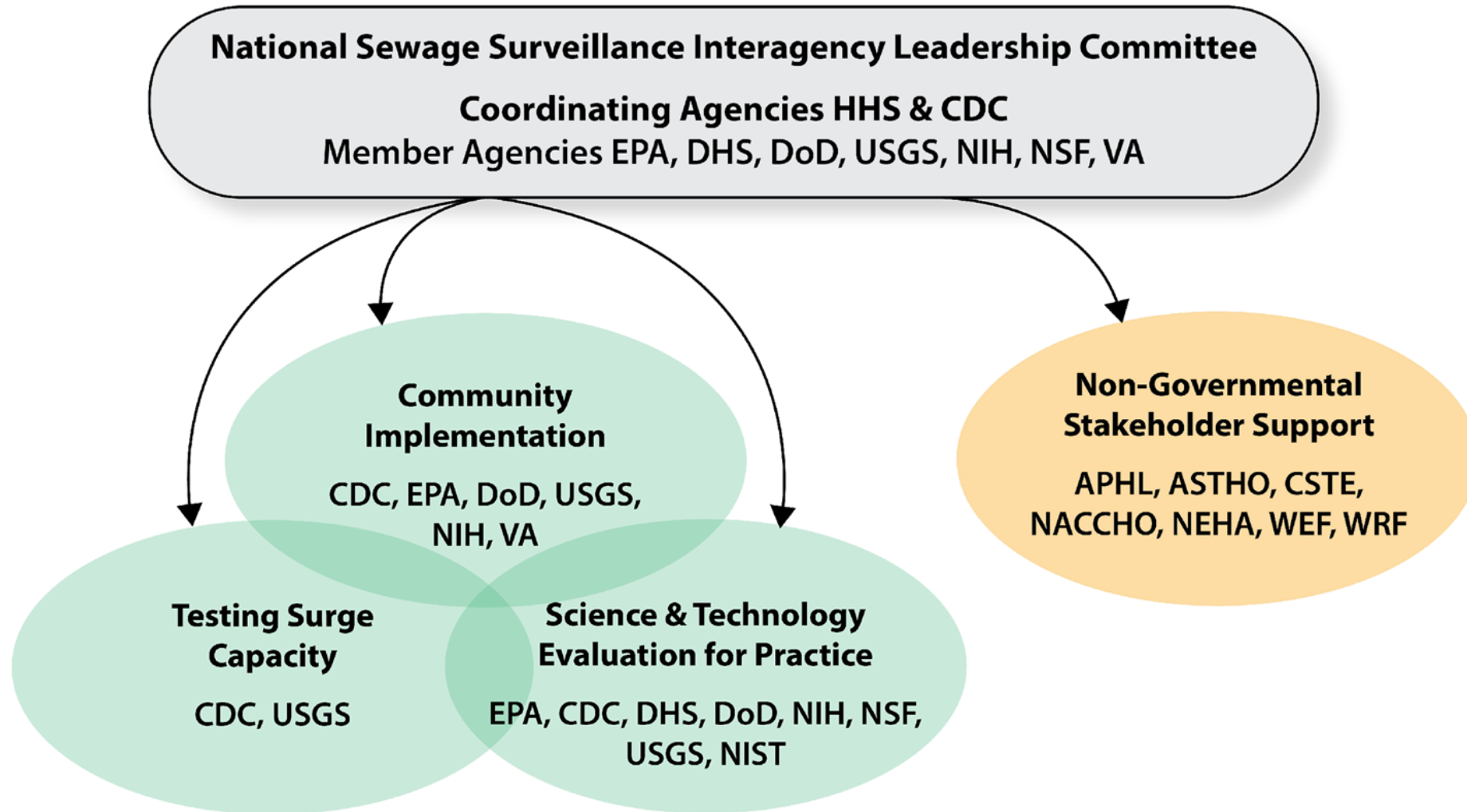
- Antibiotic resistance
- Foodborne infections
- Emerging infections

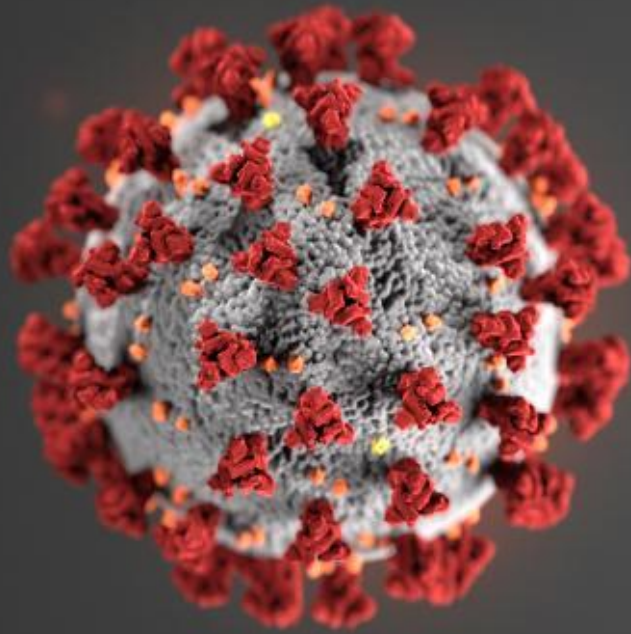
NWSS | Beyond COVID

Nimble structure to **rapidly adapt** to changing public health needs

	Emergency Response Local or regional activations in the wake of natural disasters to detect outbreaks		Emerging Infections Short-term activations to assess the prevalence and distribution of emerging threats
	Pandemic Preparedness Rapid activation and increased sampling frequency to detect pandemic spread into communities to target mitigation efforts		Bioterrorism Rapid local or regional activation with increased sampling frequency to detect and track bioterrorism threats

Federal Partnering Framework for Wastewater Surveillance



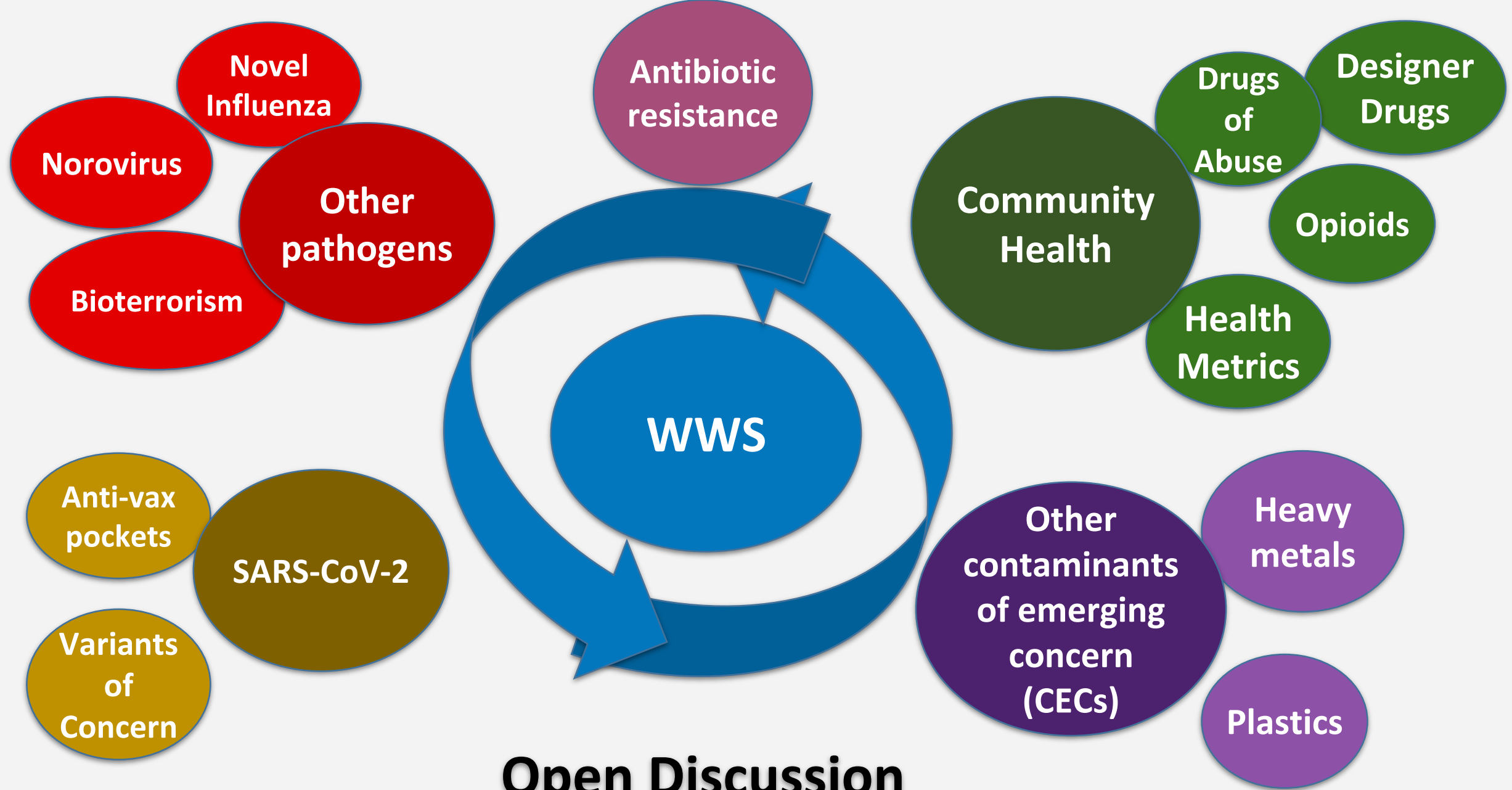


For more information, contact CDC
1-800-CDC-INFO (232-4636)
TTY: 1-888-232-6348 www.cdc.gov

Contact the NWSS team
at
NWSS@cdc.gov

The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.





Open Discussion

The Future of Wastewater Surveillance

See you next month!

Send inquiries / topics to:
rekha.singh@vdh.virginia.gov

Website:
[Wastewater Surveillance for COVID-19](#)